

County of Los Angeles

Department of Medical Examiner-Coroner

**Forensic Research Center (FRC)
and HRD K9 Training Facility**

Outline

- Introduction
- FRC Kg Training Facility
 - Purpose
- Working Dog History
- Current Kg Team
- Basic Olfaction
- Scent Rafts
- Live scent vs. Human Remains vs. Non-Human
- Research Factors That Effect Detection
- Certification Standards
- Training Benefits
- Case Study
- Annual Budget
- Sustainment
- Role During a MFI
- Educational Outreach



Introduction

- The Department of Medical Examiner-Coroner is in a unique position to develop and utilize canines as a forensic tool
 - This department can promote professionalism in the use of specialty-trained canines for forensic evidence and human remains detection



"Leave No Soul Behind"



Forensic Research Center (FRC)

- FRC to compliment our current Forensic Science Center (FSC) in order to better serve the community
 - Medico-legal *research and training facility* to advance multiple disciplines in forensic science
 - Search and Recovery Operations
 - *Human Remains Detection K9*
 - Evidence Collection
 - Investigative Techniques for All Manner and Mode
 - To include Arson, MFI: Disaster or Manmade, etc.
 - Identification Techniques
 - Field Methods in Forensic Anthropology and Taphonomy
 - Forensic Pathology and Trauma Studies

Working Dog History

- Military K9s as early as 1913
- The working canine has become an integral part of law enforcement
- Canines have proved to be invaluable
 - Patrol Dogs “Apprehension”
 - Narcotics
 - Explosives
 - Arson (Accelerant)
 - HRD
 - *Often a last resort to obtain answers for detectives and family members*
 - Chem/Bio
 - Agriculture
 - Tracking and trailing



M/E-Coroner HRD Kg Unit

- “Mission Ready” – 07/2005
 - Purchased with UASI funds
 - Required to be available for mutual aid nationwide
- With current handler – 01/2009
 - Over 180 cases
 - *Over 130 substantiated “finds”*
 - GSD DOB: 12/12/2003
 - ~1-2 years more in service
 - TBD by annual veterinary exams



Basic Kg Olfaction



125 million
receptor cells



225 million
receptor cells



- Olfactory lobe
 - Kg – Golf ball size
 - Human – pea size
- Jacobson's Organ (Vomeronasal)
 - Additional olfactory chamber
 - Vastly expands the SOS
- Receptor cells, breed specific
- Canines are macrosmatic
 - Keen SOS
- Humans are microsmatic
 - Feeble SOS
- Kg can smell Methyl Benzoate (a product of Cocaine) at 5-27 ppb!
- *Discrete sniffers*
- Directional control
 - Inhale and exhale

Scent Rafts

- The epidermal layers of the human skin is constantly replenishing itself
 - ▣ The discarded cells are called “rafts”
 - ▣ Generally, all skin cells life span is about 36 hours
- Each raft carries the genetic make-up of the person
 - ▣ Secretions, toiletries, diet, skin oils and gaseous components
- Also expelled from the lungs
 - ▣ Through upper respiratory tract
 - ▣ Exhaled into the atmosphere



Living Humans vs. Human Remains

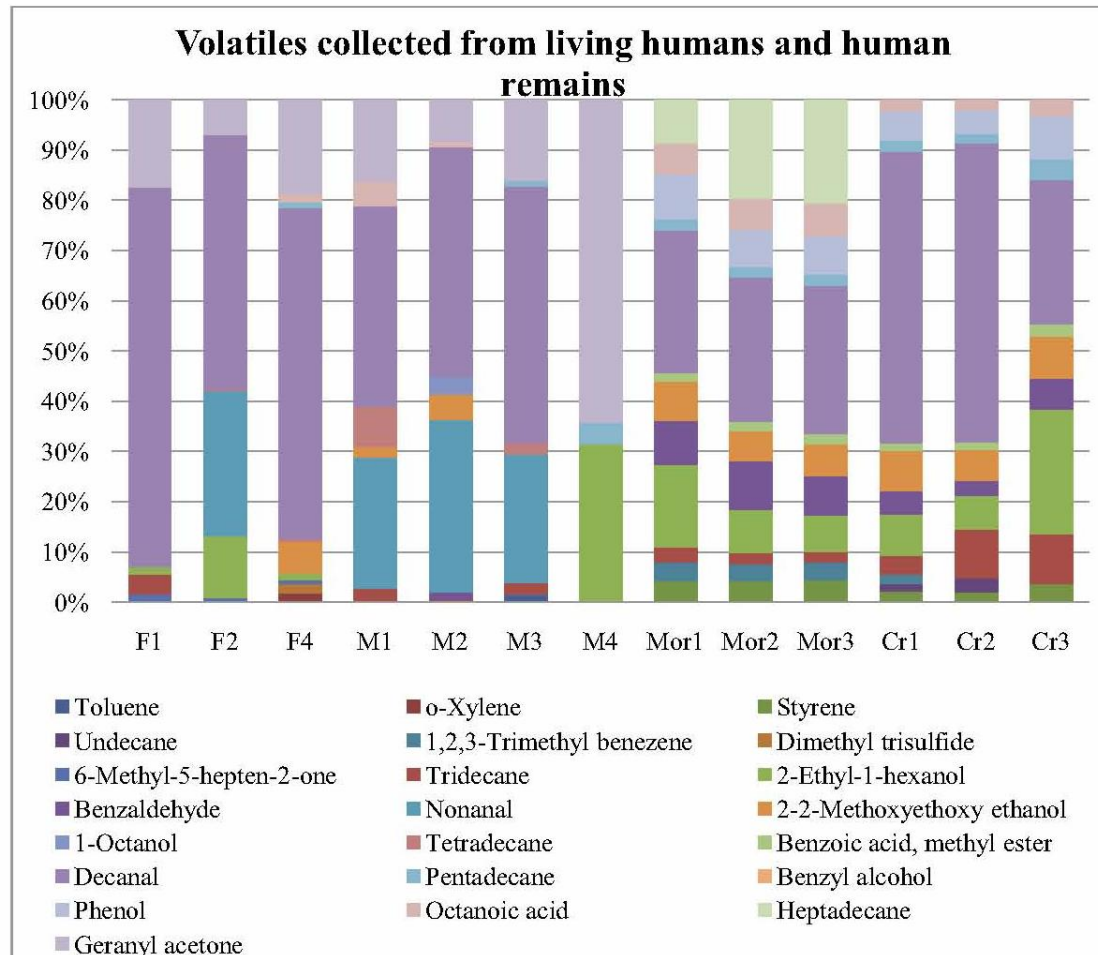


Figure 40. Volatiles collected from living human and human remains odor.

Human vs. Animal Remains

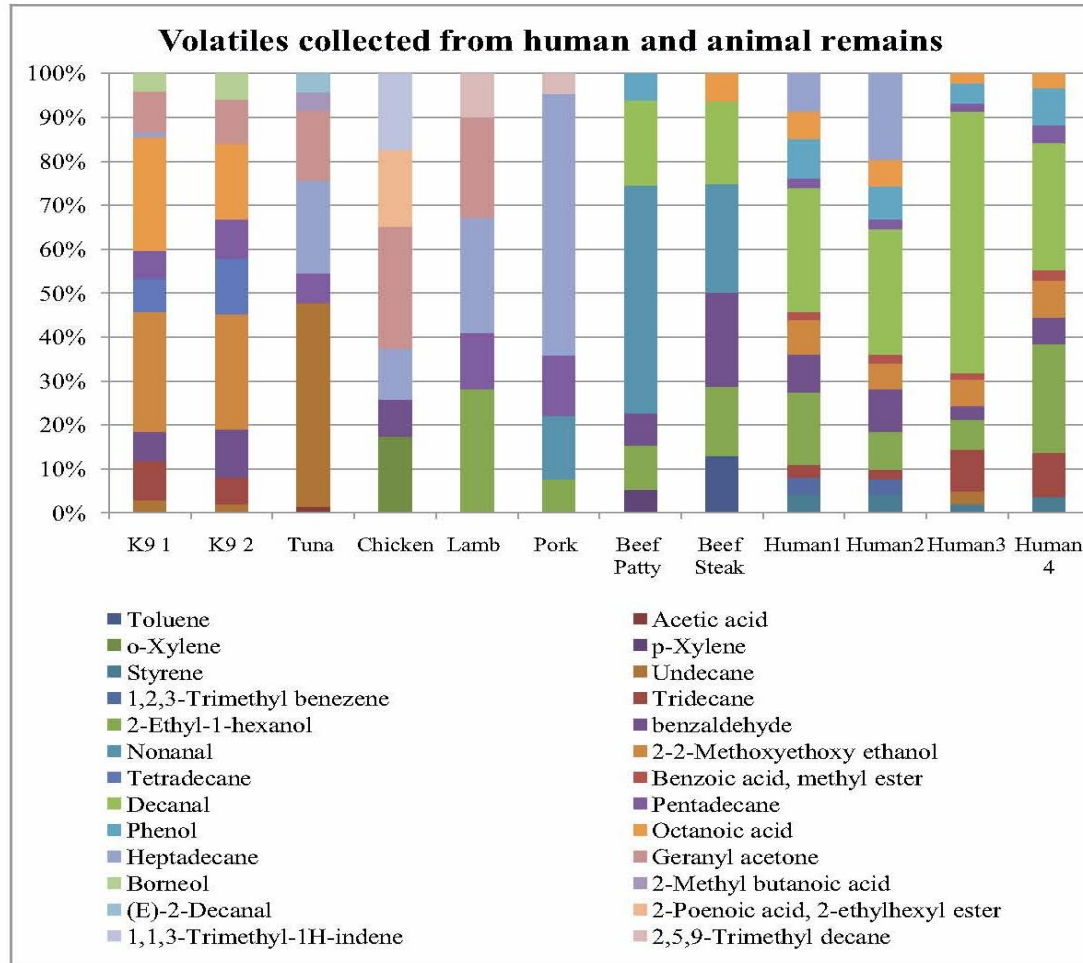
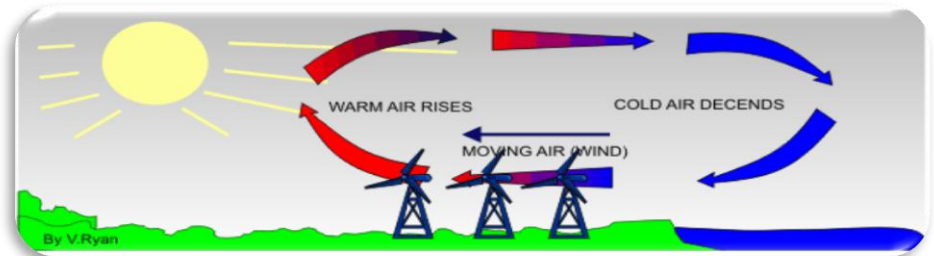
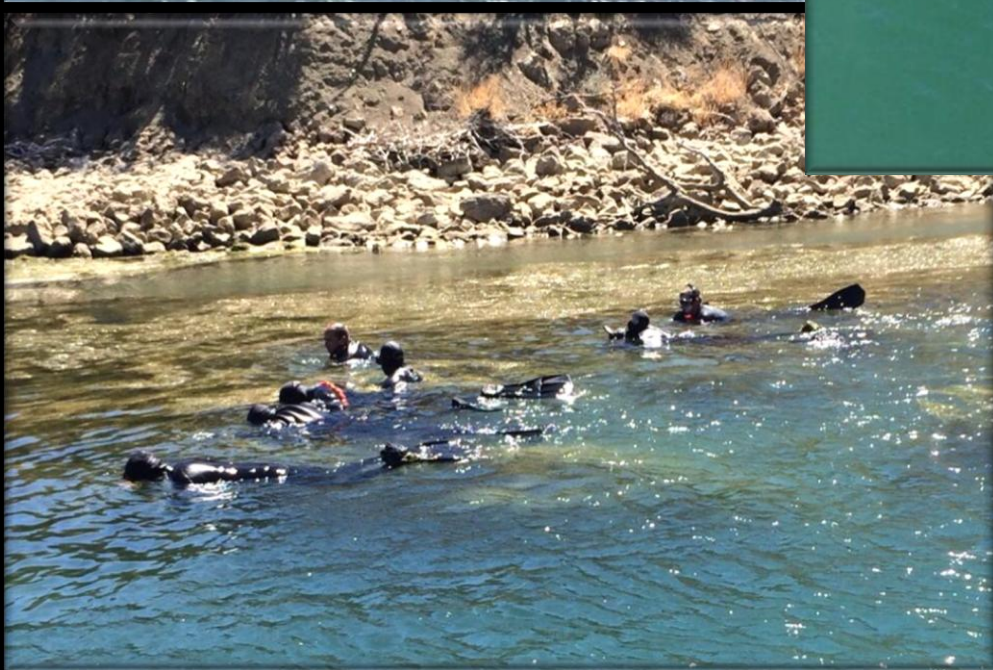
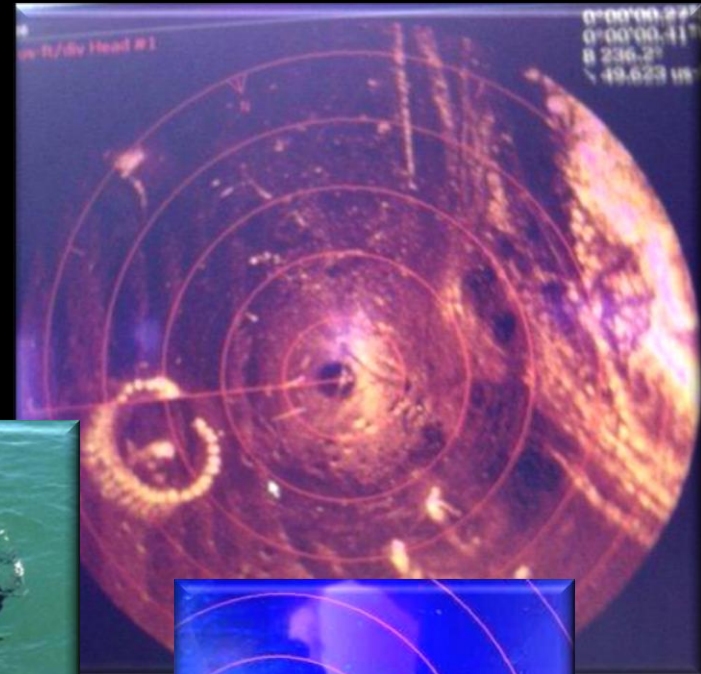


Figure 42. Odor profiles collected from the remains of animals and humans.

Research to be Conducted on Factors That Effect Detection

- *Time*
 - Left on surface? Type?
 - *Depth of burial*
 - Soil composition
 - Wrappings
 - Insect/scavenger activity
 - Temperature
 - Humidity
 - Indoors vs. outdoors
 - Water and fire
- How scent travels
 - Above ground
 - Below ground
 - Indoors
 - In water
 - Effects of weather
 - Pooling





Certification Standards

Training, Certification and Reliability

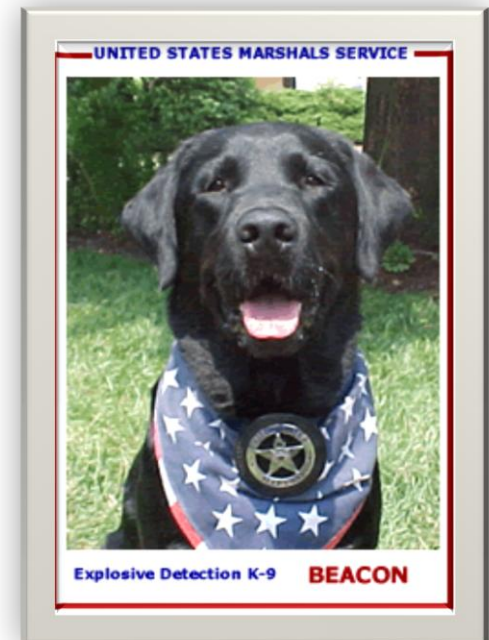


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GOVERNOR'S OFFICE
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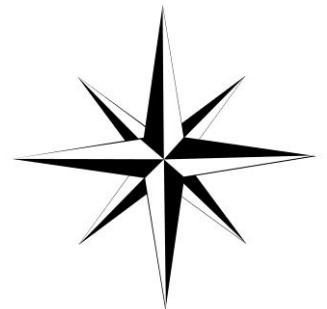
- Initial Training Courses
 - K9 Obedience
 - Handler Development
 - Detection Certification
- Testing Standards (minimum)
 - "Industry Standards"
 - SWGDOG, *California P.O.S.T.*, etc
 - Approved training aids
 - Open wilderness
 - Interior
 - Buildings and vehicles
 - Elevated, surface, buried
 - Non-human distractions (proofing)
 - 10 preliminary sign-offs, 1-acre final test
 - Obedience and socialization
- Recertification (monthly and annually)
- Legal Updates
- Associations
 - (CNCA, IEPCA, LACPCA, NASAR, NPCA)

- SCOTUS: Florida vs. Harris
 - Determining K9 reliability in deployments, where there could be either residual odor (residue) or lingering odor K9 alerts



Train-the-Trainer Benefits

- Compile data locally
 - *Potential for more relevant data applicable to our region*
 - New research and techniques to be made available to the scientific community
- Minimize the amount of personnel sent out of state to bring back new techniques
 - Less impact to regular operations
 - Similar courses offered range from \$525-\$1000 per person (class only; does not include travel, per diem, etc.)
 - Some training options are not offered at all



Why the Coroner?

- Many aspects to having a successful program
 - Operational tactics and logistics
 - Agency support
 - Policy and S.O.P.s
 - Certifications and training standards
 - *Legal acquisition* of training aids
 - Vested interest
 - Handler and “High Drive” K9
 - Specific selection process
 - Attributes and qualifications
 - Background checks
 - Courtroom testimony
 - Appropriate experience



Know What You Don't Know?

- Would a Narcotics Kg Handler...
 - Not know anything about drugs?!
- Would an Explosives Kg Handler...
 - Not know about black powder or det cord?!



TATP explosion – <http://ncfs.ucf.edu/>

- HRD Kg Handler must be proficient in
 - Coroner law (Gov't code)
 - Penal and H&S Codes
 - Kg case law
 - *4th Amendment*
 - Reliability
 - Crime scene protocols
 - Death investigation
 - Decomposition
 - Search operations
 - Report writing
 - Incident Command Structure (ICS)

Internal Benefits

- Maintaining a successful canine program allows the Operations Division to *conduct business in a more efficient manner*
 - Decreases the amount of personnel required for Special Operation deployments
 - Lessens overtime
 - Decreases impact to FSC operations



People of the State of California v Lyle Stanford Herring Sr.

- Extensive circumstantial evidence
- No forensic evidence
- Lesley's body never found
 - *K9 confirmed odor of human remains*
- Convicted of 2nd degree murder after his wife disappeared in 2009



Annual Budget

(\$7000)

- Training Weekly In-house and Interagency Training
- Annual Billing for 12 Monthly Re-certification Sessions
- Association Dues
 - Canine-related only)
- Interagency Specialized Training
 - POST courses, advanced detection, legal updates conferences, etc.
- Food
- Veterinary Exams
 - 1-Annual Healthy Pet Exam, X-rays, bloodwork, vaccinations
 - 1-Miscellaneous treatment visit
 - Emergency Veterinary Services
- Flea and Heartworm Prevention - 12 month supply
- Kg Supplies and Replacement Equipment
 - Training supplies, grooming supplies, kennel supplies, bedding, towels, brushes, bowls, booties, collars, muzzle, harnesses, leashes, supplements, first aid supplies, disposable waste bags, etc.
- Boarding
- Other/miscellaneous

Sustainment

PROJECTION - FY15-16

- Replacement K9 - **\$7300**
 - Guaranteed against all congenital and performance issues for 12 months
 - Overlap to allow for development prior to current kg's retirement
- Detection Certification Course - **\$4500**
- Replacement K9 SUV - **\$County Pricing**
- Separate equipment, food and veterinary overlap – **minimal (with same handler)**

DONATION ACCOUNT - *IN HIGH DEMAND BY THE PUBLIC*

- Researching potential fundraising options for self-sustainment
 - County Donation Trust Fund
 - 501 (c)(3)



Importance of the Coroner's Role in a Mass Fatality Incident

- The Coroner's importance during an emergency response *may not be obvious*; saving life and ameliorating human suffering are the focus of most post-incident operations
- Proper accounting for remains and providing closure for the families of decedents has been demonstrated to be a valuable mechanism for *reinforcing the general morale of the populace*
- "The Coroner cannot be dependent on local fire departments to perform the recoveries..."

Educational Outreach

- Government Entities
 - It is vital that the agencies we interact with understand our capabilities
 - The support we have generated since the inception of the program has fortified our relations and we are well respected due to our *reputation for training standards, professionalism and results*
- Community Events
 - El Camino College Young Scholars Program
 - “Operation Kennel Mom” Military Working Dog Donation Program
 - Whittier Community Foundation “Paws 4 A Cause”
 - Kg’s For Kids – Kaiser Permanente
 - Los Angeles County Emergency Preparedness Expo (2009)

Summary

- Working dogs are well established
- Human Remains Detector K9's are a unique specialty
 - The FRC will allow for significant advancement in this particular canine discipline
- A canine selectively trained and maintained to search and find human remains is an **invaluable and natural asset** to the Department of Coroner
 - Help families find closure and keep the community safer

Questions?



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